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Hidrotechnics Prevent Vibrations that Occur in Constructions

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Annotation: The preservation of the hydrotechnical structures from the vibration phenomenon is due to the Reserve work, which is carried out taking into account the circumstances associated with an increase or decrease in the flow in the project, an increase in the flood arrival time, a complete cessation of the water discharge pipeline, these works are completely received from the vibration phenomenon and the

Keywords: cavitation, erosion, vibration, thermal efficiency, multi-phase liquid, dynamics.

Introduction: Finding the normal suction height of HES turbines, the emergence of cavitation processes at heights above or below this suction height, causes a meeting of vibrations of the HES and its construction. As a result of the deepening of the working wheel, the vibration of the entire system is observed, which leads to the penetration of cavitation into erosion. Such changes davriy will require that there will be repair work in progress. But as it turned out, in order to eliminate the vibration effect due to the absorption of cavitation erosion, it is useful to make a small deepening of the working building, provided that the working wheel is repaired.

Main body: In order to protect erosion objects, such as landscaping or cavitation, producing manual farming. As more and more people leave their homes, they increasingly turn to us.

$K > K_{кр}$

Here: K is the cavitation parameter, K_{KR} is the cavitation parameter, which is critical. For some types of energy sinks and flow separators, K_{KR} values are given in.

From this it can be seen that the less the tension to the extinguishers leads to a decrease in its K_{KR} coefficient, which means that it improves the cavitation properties of the extinguisher, thereby allowing it not to suffer cavitation even at very high speeds, but this situation leads to a decrease in the energy absorption properties of the extinguisher.

Gawlika and the science of water problems are still needed, has not reached the level of detection of various types of temporary injuries through the accounting of the growth process. But with the help of calculations it is possible to make reliable decisions on the protection of structures from vibrations.

In all of the above water bodies and pipes, various dissolved substances in running water, solid granules, whitewash in nature pure water itself is much less than threeraydi. Small vibrations in the water also lead to large fluctuations, so the fluid under consideration forms a complex multi-phase liquid.

In the works of the above scientists and in the works of other authors, the methods that determine the rotational motion in water discharges required accuracy, otherwise the expected result in the design, exploitation of the gidroinshoot will not be obtained. The nature and legality of the currents coming out of the pipes and from the

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water dumps, along the pipe, into circulation, has not been fully studied. There is no stagnation of flow in connection with the occurrence of cross-circulation in the pipes conducting a water-carrying vortex.

The flow is transformed and flows with a spiral shape over the entire length of the pipe. The rotation axis of the spiral current is have, first the rotation axis is tilted and the swirling pinwheel looks. Then, under the influence of an irregular current, the swirling coil breaks down and rotates together with the current. After rotation, a few large swirls form in the stream, and this condition is called a division of swirls. The process of whirling and the division of the current into several streams occurs through the dynamics of the emergence of large energy.

This process occurs through speed pulsations, and in the flow mode, enhanced turbulence occurs. The stagnation in the stream disappears and a cross-circulatory flow occurs, the flow type changes to the circulating stream.

Any type of current is divided into two characteristic spheres:

The Central sphere with a whirlpool (Whirlpool core), that is, the sphere with a large whirlpool, that is, the sphere with a small Whirlpool, which is outside the sphere.

The swirling field is a non-standard field of flow, in this area there are excitation, the deviation of the flow from the symmetry axis is observed, and as a result of this, the circulation is burned, and the centrifugal force field that stabilizes the flow is burned. The flow passes from the symmetrical form to the spiral form, without being able to suppress non-symmetrical excitation.[1,2]

As a result of the subsequent reduction in circulation, the circulatory flow ends completely and becomes a weak circulating current.

High-speed pipe and as a result of a decrease in the hydrodynamic pressure of flowing streams in the canl causes the release of oxygen from the water. This process creates a two-phase flow consisting of water and air.

Due to a decrease in pressure in the air mixture in the water in the tapered pipe, a cavitation process occurs, which leads to a violation of the hydro technical structure by removing the pulsation and vibration gel.

As an example, we can see that the construction of the 185m dam on the project was planned at the Hidrotechnical complex. From the process of exploitation, when the pressure reaches 105m, dangerous situations begin to arise in the water discharge plant. When the flow rate reached 25 m/s, the stagnant movement of the flow began, and in the water discharge system, a 5.5-point vibration process began.[3,4]

As is known, cavitation is a murracean process, cavitation produces pulses and vibrations. And these processes completely change the flow regime, that is, the flow passes from a calm state to a complex developed turbulent state. In the stream there are swirls, circulatory States relative to the arrow. In such cases, as a result of interaction, a rise in temperature in the flow is observed. To characterize the cavitation prosses, we use the coefficient of cavitation.

$$K=\frac{H_{\text{хар}}-H_{\text{кр}}}{v_{\text{хар}}^2/2g}$$

At constant temperature, through static and dynamic pressures, constant pressure in the flow occurs, or there is a decrease in pressure. Due to the decrease in pressure, the vapor bubbles in the stream begin to form, increasing along the flow and turning into caverns. Due to the fact that the pressure in the caverns is greater than the pressure in the liquid, it exits to the surface of the flow crack, there is a phenomenon of pulsation and cavitation in the flow, vibration in the pipes begins.[5,6]

Conclusion: In addition to the fact that the cavitation process produces vibration gel, the migration along the cavitation stream causes the formation of non-condensing gas bubbles, caverns in the stream. Gas bubbles in the

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stream, Cavernas go up, narrow and then burst. Such non-stationary gas bubbles also appear in the walls of the caverns, due to low pressure near the wall.

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